

CLAIMS

What is claimed is:

1 1. A device for moving a tire assembly about a floor surface and mounting
2 the tire assembly to a vehicle, comprising:
3 a platform configured for moving about the floor surface;
4 a pneumatic source for providing a layer of air between said platform and the
5 floor surface beneath said platform;
6 a support mounted on said platform, said support defining a horizontally
7 extending central axis and configured to receive and support the tire assembly; and
8 an elevator connected to said platform and said support, said elevator configured
9 to raise and lower said support relative to said platform;
10 wherein said device is supported on the layer of air so that the platform is
11 movable above the floor surface.

1 2. The device of claim 1, further comprising at least one pneumatic caster,
2 disposed on said platform adjacent the floor surface, said at least one pneumatic caster in
3 fluid communication with said pneumatic source.

1 3. The device of claim 1, further comprising an air restraining skirt, disposed
2 about a periphery of said platform and depending downwardly toward the floor surface,
3 said air restraining skirt configured to retain air from said pneumatic source between said
4 platform and said floor surface.

1 4. The device of claim 1, wherein said elevator further comprises a
2 pneumatically operated elevator.

1 5. The device of claim 1, further comprising:
2 a cradle mounted on said support and rotatable about said central axis, said cradle
3 including a pair of tire engaging supports spaced from each other a distance less than a
4 diameter of the tire assembly, said tire engaging supports for supporting the tire assembly
5 in an upright attitude;
6 so that the tire assembly positioned in said cradle is elevated to a desired height
7 by said elevator and is rotatable about said central axis to align the tire assembly with the
8 vehicle, and said platform is movable toward the vehicle to engage the tire assembly with
9 the vehicle for mounting.

1 6. The device of claim 5, further comprising:
2 a tire tilt restrainer rotatably mounted to one of said tire engaging supports,
3 including;
4 a bearing sleeve rotatably disposed about said tire engaging support; and
5 a restrainer plate connected to said bearing sleeve and perpendicular to said
6 central axis, said restrainer plate configured to maintain the tire assembly in an upright
7 position when the tire assembly is supported by said pair of tire engaging supports.

1 7. A device for moving a tire assembly about a floor surface and mounting
2 the tire assembly to a vehicle, comprising;
3 a platform configured for moving about the floor surface;
4 a support mounted on said platform, said support defining a horizontally
5 extending central axis;
6 an elevator connected to said platform and said support, said elevator configured
7 to raise and lower said support relative to said platform; and
8 a cradle mounted on said support and rotatable about said central axis, said cradle
9 including a pair of tire engaging supports spaced from each other a distance less than a
10 diameter of the tire assembly, said tire engaging supports for supporting the tire assembly
11 in an upright attitude;
12 so that the tire assembly positioned in said cradle is elevated to a desired height
13 by said elevator and is rotatable about said central axis to align the tire assembly with the
14 vehicle, and said platform is movable toward the vehicle to engage the tire assembly with
15 the vehicle for mounting.

1 8. The device of claim 7, further comprising a pneumatic source in fluid
2 communication with said platform, said pneumatic source for providing a layer of air
3 between said platform and the floor surface beneath said platform.

1 9. The device of claim 8, further comprising a pneumatic caster disposed on
2 said platform adjacent the floor surface, said pneumatic caster being in fluid
3 communication with said pneumatic source.

1 10. The device of claim 8, further comprising an air restraining skirt disposed
2 about a periphery of said platform and depending downwardly toward the floor surface,
3 said air restraining skirt being configured to retain air from said pneumatic source
4 between said platform and the floor surface.

1 11. The device of claim 7, wherein:
2 said support further includes a vertical plate defining a circular opening about said
3 horizontally extending central axis; and
4 said cradle further includes a plurality of bearings configured to engage said
5 circular opening so that said cradle is rotatable relative to said vertical plate.

1 12. The device of claim 7, further comprising a pneumatic source in fluid
2 communication with said platform and said elevator, said pneumatic source for providing
3 a layer of air between said platform and the floor surface beneath said platform and for
4 operating said elevator.

1 13. The device of claim 7, further comprising:
2 a tire tilt restrainer rotatably mounted to one of said tire engaging supports,
3 including;
4 a bearing sleeve rotatably disposed about said tire engaging support; and
5 a restrainer plate connected to said bearing sleeve and perpendicular to said
6 central axis, said restrainer plate configured to maintain the tire assembly in an upright
7 position when the tire assembly is supported by said pair of tire engaging supports.

1 14. A device for moving a tire assembly about a floor surface and mounting
2 the tire assembly to a vehicle, comprising:

3 a platform configured for moving about the floor surface;

4 a support movably connected to said platform and defining a horizontally
5 extending central axis, said support including a pair of tire engaging supports spaced
6 from each other a distance less than a diameter of the tire assembly, said tire engaging
7 supports for supporting the tire assembly in an upright position;

8 an elevator connected to said platform and said support, said elevator for raising
9 and lowering said support relative to said platform;

10 a tire tilt restrainer rotatably mounted to one of said tire engaging supports,
11 including;

12 a bearing sleeve rotatably disposed about said tire engaging support; and

13 a restrainer plate connected to said bearing sleeve and perpendicular to said
14 central axis, said restrainer plate configured to maintain the tire assembly in an upright
15 position when the tire assembly is supported by said pair of tire engaging supports.

1 15. The device of claim 8, said tire tilt restrainer further comprising a receiver
2 plate connected to said bearing sleeve, said receiver plate being configured to rotate said
3 bearing sleeve about said tire engaging support when the tire assembly is supported by
4 said pair of tire engaging supports, thereby rotating said restrainer plate into a tire
5 assembly restraining position.

1 16. The device of claim 15, further comprising a pneumatic source in fluid
2 communication with said platform, said pneumatic source for providing a layer of air
3 between said platform and the floor surface beneath said platform.

1 17. The device of claim 16, further comprising a pneumatic caster disposed on
2 said platform adjacent the floor surface, said pneumatic caster being in fluid
3 communication with said pneumatic source.

1 18. A device for moving a tire assembly about a floor surface and mounting
2 the tire assembly to a vehicle, comprising:
3 a platform configured for moving about the floor surface;
4 a support mounted on said platform, said support defining a horizontally
5 extending central axis and configured to receive and support the tire assembly;
6 means for raising and lowering said support relative to said platform;
7 means for creating a layer of air between said platform and the floor surface; and
8 wherein said device is supported on the layer of air so that the platform is
9 movable above the floor surface.

1 19. The device of claim 18, wherein said means for raising further comprise
2 pneumatic means.

1 20. The device of claim 18, further comprising a cradle mounted on said
2 support and rotatable about said central axis, said cradle including a pair of tire engaging
3 supports spaced from each other a distance less than a diameter of the tire assembly, said
4 tire engaging supports for supporting the tire assembly in an upright attitude.